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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,259	07/03/2003	Kevan Peter Jones	PAT 2379A-2	4912
26123	7590	09/17/2004	EXAMINER	
BORDEN LADNER GERVAIS LLP WORLD EXCHANGE PLAZA 100 QUEEN STREET SUITE 1100 OTTAWA, ON K1P 1J9 CANADA			HUGHES, DEANDRA M	
			ART UNIT	PAPER NUMBER
			3663	

DATE MAILED: 09/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/613,259

Applicant(s)

JONES ET AL.

Examiner

Deandra M Hughes

Art Unit

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— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 July 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 and 35-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25, 35-37, 40 and 46-54 is/are rejected.
- 7) ☒ Claim(s) 38-39 and 41-45 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/3/2003
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Information Disclosure Statement*

1. The information disclosure statement (IDS) submitted on 7/3/2003 contains three pages one of which is the form PTO-892 that is part of the parent application (09/975,362) file. The references contained therein have not been properly cited, i.e. on a form PTO-1449. However, in the interest of compact prosecution, the references were considered and a listed on the form PTO-892 accompanying this office action.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 15-18 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Kinoshita (US 6,496,300 filed Jun. 9, 1998).

Paragraph [0053] of the instant applications defines 'flexibility site' as a switching node.

With regard to claim 15, Kinoshita discloses a line amplification system for a wavelength switched optical network comprising:

- at a first flexibility site (fig. 9, 31-8), a post-amplifier unit (31-2) for amplifying a WDM optical signal (OPT IN1) and launching same over a fiber link;
- at a second flexibility site (fig. 9, 31-7), a pre-amplifier unit (31-1) for amplifying said WDM optical signal received over said fiber link;
- one or more line amplifier units (LWAW1) connected on said fiber link between said first and second flexibility sites for amplifying said WDM signal;
- and a line monitoring (32-4) and control system for collecting a plurality of real-time operational parameters (MANAGEMENT COMPLEX 1) pertinent to the current operation of said units and operating said line amplification system according to a plurality of target operational parameters,
- wherein said real-time operational parameters change due to end-to-end network churn caused by dynamic set-up and tear-down of user (fig. 27-28) connections.

With regard to claim 16, the fig. 9 discloses a shelf-level layer and fig. 3 discloses a link level layer.

With regard to claims 17-18, the card packs contain local addresses (figs. 4-7).

With regard to claim 25, fig. 9, 31-5 is the optical link gain level controller.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4, 6, 9-12, 14, 35-37, 40, and 46-54 are rejected under 35 U.S.C.

103(a) as being unpatentable over Berg (US 6,757,098 filed Mar. 27, 2001) in view of Coin (US 6,590,644 filed Jan. 12, 2001).

With regard to claim 1, Berg discloses an optical amplifier comprising:

- a Raman module (fig. 15, #100-103) for amplifying a WDM optical signal with a Raman gain;
- an EDFA module (fig. 15, #20-1) connected to said Raman module for further amplifying said WDM signal with a EDFA gain;
- and a controller (fig. 12c, #60) for monitoring and controlling operation of said optical amplifier.

Berg does not specifically disclose a shelf-level control network for monitoring the optical amplifier to maintain a substantially similar power for all channels of said WDM signal. However, Coin teaches a shelf-level control network for monitoring and calibrating optical amplifier modules (fig. 5) to maintain a substantially similar power for all channels. It would have been obvious to one of ordinary skill in the art (e.g., an optical engineer) to use a shelf-level control network for automatic level control of the amplifiers for the advantage of modularity.

With regard to claim 2, fig. 3 discloses an embedded controller (#24). The OSC (optical service channel) provides the data on the current amplifier performance.

With regard to claims 3 and 12, the modules are cards (col. 7, lines 35-40).

With regard to claim 4, the EDFA module has first and second stages (fig. 15, #20-1 and 20-2).

With regard to claims 10 and 14, the VOA (fig. 3, #24) flattens out the gain.

With regard to claim 11, fig. 6 discloses a DCM module.

With regard to claim 6, the Raman amplifier module contains two pumps (col. 3, lines 20-40).

With regard to claims 9, 35-37, 40, and 46-54, Berg does not specifically disclose an OSA. However, Coin teaches the use of an OSA (#50). It would have been obvious to one of ordinary skill in the art (e.g., an optical engineer) to use an OSA for the advantage of calibrating the optical signal.

6. Claims 1, 5, 7-8, and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berg (US 6,757,098 filed Mar. 27, 2001) in view of Antoniades (US 2002/0048066 filed May 15, 2001). Berg does not specifically disclose a shelf-level control network for monitoring the optical amplifier. However, Antoniades teaches the use of shelf-level controller (fig. 3, MASTER CONTROLLER). It would have been obvious to one of ordinary skill in the art (e.g., an optical engineer) to use a shelf-level control network for the advantage of increased transparency.

With regard to claims 5, 7-8, and 12-13, Antoniades teaches embedded gain control for both of the Raman and EDFA modules ([0075]). It would have been obvious to one of ordinary skill in the art (e.g., an optical engineer) to use an embedded gain controller in the amplifier modules for the advantage of constant gain among the transmitted signals.

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7. Claims 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walters (US 2002-0176131 filed Feb. 28, 2001) in view of Gerrish (US 6,631,027 filed Feb. 20, 2001).

Walters discloses:

- a link control layer (fig. 4) comprising a plurality of shelf processors for coordinating operation of optical modules connected on a link of said wavelength switched optical network to achieve a target profile for the target link ;
- a network control layer (fig. 5) comprising a plurality of optical link controllers for coordinating operation of all optical modules placed on a plurality of consecutive links making-up a connection.

However, Walters does not specifically disclose an optical amplifier card with an embedded controller for controlling the amplifier pack. However, Gerrish teaches an optical amplifier card (fig.1) with an embedded controller (190). It would have been obvious to one of ordinary skill in the art (e.g., an optical engineer) to use an optical amplifier card with an embedded controller for the advantage of modularity.

***Allowable Subject Matter***

8. Claims 38-39 and 41-45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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9. The following is a statement of reasons for the indication of allowable subject matter. The prior art does not teach or make obvious reducing the Raman gain to the claimed flexed gain value *while keeping the EDFA gain constant*.

**Conclusion**

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bolshtyansky, Evans, Fee, Gassner, Milton, Moothart, Roberts, Tomooka, Treyz, Wysocki, and Ye disclose modular optical amplifiers.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deandra M Hughes whose telephone number is 703-306-4175. The examiner can normally be reached on M-F, 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H Tarcza can be reached on 703-306-4171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
DMH

MARK HELLNER  
PRIMARY EXAMINER

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